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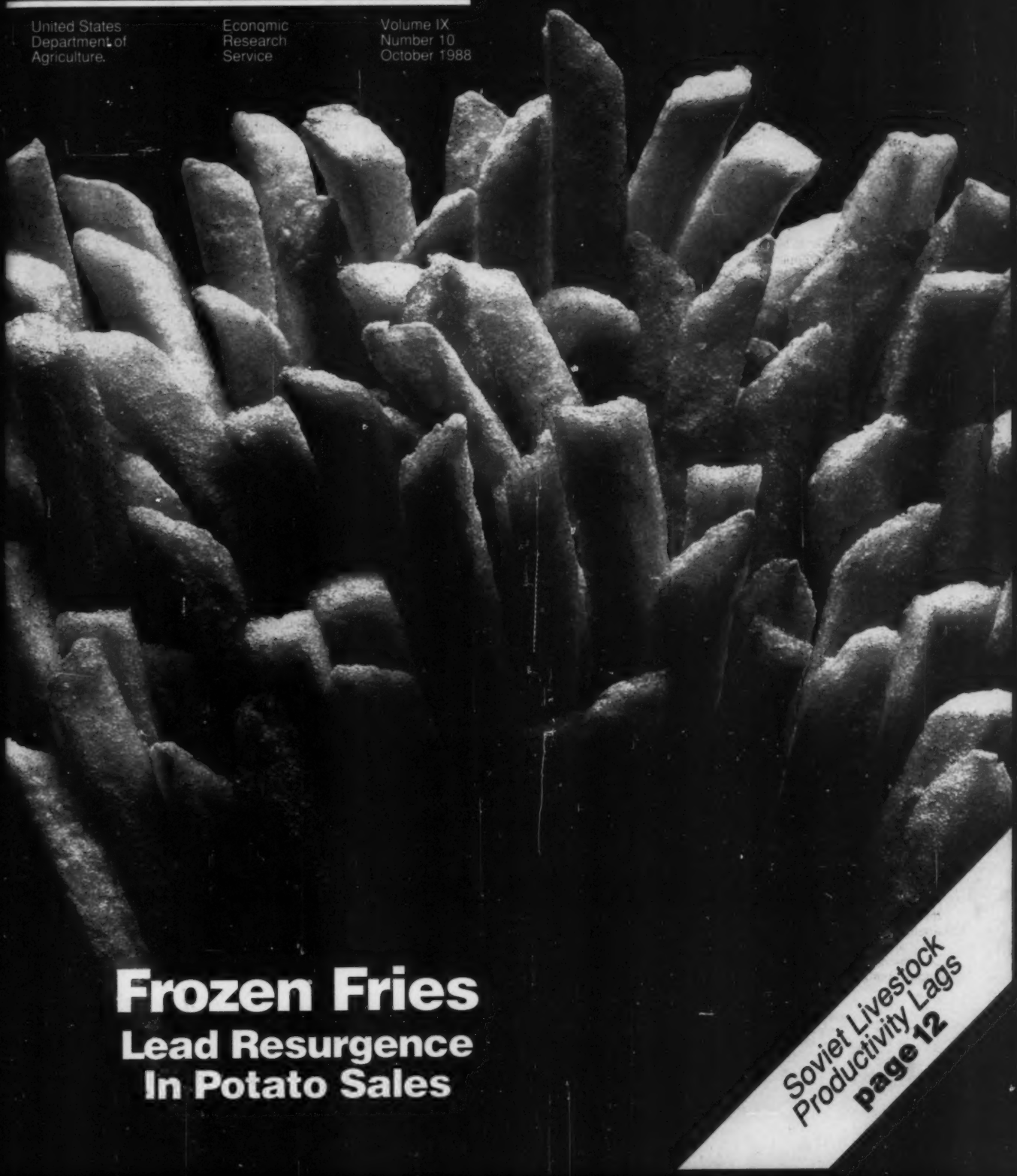

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PERSPECTIVES

CASH RECEIPTS from crops and livestock produced on U.S. farms are expected to total $5-$9 billion more this year than in 1987, despite the serious drought that has reduced output in many parts of the country. Economist Bob McElroy of USDA's Economic Research Service says that crop receipts should be $66-$68 billion (up from $61.9 billion last year) and livestock receipts $77-$79 billion (up from $76.2 billion).

Higher prices plus sales of stocks held from previous years are bolstering cash receipts, McElroy says. The drought is expected to reduce the corn crop by 37%, soybeans by 23%, and wheat by 14%. These estimates are based on September 1 crop conditions. The drought occurred after a year of solid financial gains, which should help many producers withstand the impact of the bad weather, the economist says. But the regions with the most severe drought damage are those where the recent economic progress was less evident. Government drought-relief assistance of nearly $4 billion will lessen the effect of the drought on many farm businesses.

Drought damage has varied greatly from place to place, depending on such factors as localized rainfall, specific crops and planting times, and irrigation capability. McElroy says that irrigated farms or those that had large stocks of 1987 crops might actually do better this year—because of higher prices—than they would have if the drought had not occurred.

ERS income and finance forecasts for 1988 also indicate direct government payments of $14-$16 billion (some 5-15% below last year's $16.7 billion), total cash expenses of $106-$109 billion (up from $103.3 billion a year ago), and net cash farm income of $55-$60 billion—close to 1987's record-high $57.1 billion. Net farm income, however, will drop from last year's high of $46 billion as commodity inventories decline by a projected $6-$8 billion because of the drought.

Net cash income is likely to fall in 1989, with additional crop acreage meaning higher production expenses. But net farm income, which includes inventory buildups, could be higher next year, McElroy says.

Net farm income estimates for 1987, recently updated, show that the top ten states were California with $5.7 billion, Texas $3.7 billion, Iowa $2.8 billion, Florida $2.3 billion, Nebraska $2.1 billion, Minnesota $2.0 billion, Wisconsin $1.7 billion, Kansas $1.7 billion, Illinois $1.6 billion, and North Carolina $1.4 billion. (The bottom five were Nevada $49 million, Rhode Island $46 million, New Hampshire $33 million, West Virginia $29 million, and Alaska $15 million.)

The proportion of U.S. farms with debts of more than 40% of assets fell from 22% at the beginning of 1987 to 15% at the beginning of 1988, McElroy says. During that year's time, the percentage of farms in a vulnerable financial position (defined as those with negative farm income as well as debt-to-asset ratios above 40%) fell from 10% to 5%.

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Practical economic intelligence from USDA's Economic Research Service

FEATURES

Frozen French Fries Lead Resurgence in Potato Sales *by Doug Martinez* 4

U.S. potato farmers are seeing renewed interest in their commodity, both at home and overseas. Frozen french fries are the hot item in export sales. Several efforts to continue the growth of exports are under way, including the government's Targeted Export Assistance Program.

Buyers of Farmland Are Mostly Farmers *by Juliana King* 8

No dramatic shifts in use or ownership of U.S. farmland have been occurring, according to ERS's Farmland Market Survey. When farmland is sold, the buyer is usually another farmer and the land is likely to remain in farming. The patterns are not uniform throughout the country, however.

Monetary Policies Crucial to Farm Trade *by Doug Martinez and Jack Harrison* 10

The strong dollar was an important factor in the decline of American farm exports in the early 1980's. U.S. farmers learned a bitter lesson about how they can be affected by the international monetary system. Agreements on monetary policies, as well as export policies, may be necessary if freer world trade is to be achieved.

Soviet Livestock Productivity Lagging *by Judith Foulke* 12

The Soviet Union has been making big efforts to improve its livestock sector in recent years, but productivity still lags behind that of other countries, especially the United States. Future Soviet decisions on the quantities of higher quality feeds to be imported will be important to U.S. exporters and producers.

DEPARTMENTS

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(Cover photo from the National Potato Promotion Board.)

Frozen French Fries Lead Resurgence In Potato Sales

Powered by the popularity abroad of fast food chains featuring french fries, American potato exports are sizzling. At home, frozen use has never been higher, and the microwave oven has given the fresh potato a new lease on life.

"Potatoes pull in nearly $1 of every $5 received by American vegetable producers," says economist Gary Lucier of USDA's Economic Research Service.

In the last 5 years, receipts have ranged from a low of $1.4 billion in 1986 to a high of $1.9 billion in 1984.

The industry's future growth, however—particularly in the area of exports—may rest on the outcome of two pending matters:

One is the "free trade" agreement between the United States and Canada, now before the U.S. Congress and the Canadian Parliament. At the moment, the two nations buy and sell potatoes from each other at a healthy pace. Will the proposed agreement substantially alter the potato trade pattern, giving one country a much larger market share?

Some potato industry spokesmen have criticized the agreement, saying it will offer an unfair advantage to Canadian producers who receive price and transportation subsidies from their government. U.S. growers in the Northeast are generally opposed to the agreement since their markets are affected most by imports of Canadian round white potatoes. Western growers generally favor the agreement since they export their russet potatoes to Canada. Also, western producers have been repeatedly charged with "anti-dumping" suits by Canada.

The proposed agreement does provide protection to American growers, though, in the form of the "snapback provisions," which allow the United States to reimpose temporary tariffs if the volume of Canadian imports significantly affects U.S. potato prices.

The second matter is U.S. access to foreign markets that have traditionally been tough to enter because of extremely low import quotas for potatoes. One such market is South Korea, where a fast-growing economy could mean far greater sales of U.S. potato products.

Frozen potato use has continued to grow, with frozen use now nearly equalling fresh. In 1970, frozen use was less than half of fresh.

Japan a Hot Market

The tantalizing taste of increased export potential has been offered by the example of Japan, which bought 83 percent of U.S. french fry exports in 1987. That represented more than 70 percent of total 1987 frozen vegetable exports to Japan. Overall, exports of U.S. frozen french fries have risen 190 percent since 1980, with most going to Japan. They are continuing their rapid rise this year as well.

Moreover, exports look even more appealing given the status of domestic consumption in our country.

"U.S. per capita utilization of potatoes has, on average, remained fairly constant since 1970," says Lucier's colleague, ERS economist Shannon Hamm. "What has changed is the definite shift from fresh to processed product that has occurred since 1970."

Since 1978, she says, "fresh potato use has stabilized with the introduction of baked potatoes in fast food restaurants and increased use of microwave ovens in homes. Fresh potato use had been declining. Frozen potato use has continued to grow, with frozen now nearly equalling fresh. In 1970, frozen use was less than half of fresh."

Although slight growth in other processed use has come from potato chips and "shoestrings," this gain has been offset by declines in canned, dehydrated, and other products.

"Consumers now eat twice as many frozen potatoes, about 80 percent in the form of french fries, as they did in 1970," says economist Lucier. "Growth in the popularity of fast food chains, which almost universally feature french fried potatoes, lies behind this strong trend. If the popularity of fast foods continues and a newly perfected french fry vending machine finds favor, continued growth in frozen use is likely."

Canada Is Our Largest Customer for Fresh Potatoes, While Japan Is Our Best Customer for Frozen French Fries

	1984	1985	1986	1987
	thousand metric tons			
Fresh exports[1]	154	141	144	155
Canada	146	137	138	151
Mexico	4	2	4	2
Others	4	2	2	2
Frozen exports[2]	64	66	89	112
Japan	46	52	70	87
Hong Kong	3	4	5	6
Canada	3	4	4	4
Others	12	6	10	15
Total exports	217	207	233	266
Imports[3]	138	168	181	225
Canada	135	166	180	224
Others	3	2	1	1

[1]Canadian import data are used to report U.S. exports to Canada. [2]Mainly frozen french fries. [3]Fresh and frozen potatoes.

The consumption pattern shows frozen potato products accounting for 31 percent of the 1986 potato harvest, up from 27 percent in 1982 and 22 percent in 1970.

"Conversely," says Lucier, "from 1982 to 1986, use as table stock (fresh use at meal times) declined from 32 to 30 percent of the crop." Other uses in 1986 were for potato chips (13 percent), dehydrated potatoes (8 percent), potato seed (7 percent), canned potatoes and starch and flour (2 percent), and livestock feed (1 percent). Shrinkage and loss accounted for 8 percent.

The American potato harvest that finds its way to us in more than a dozen forms comes from some 27,000 farms, according to the 1982 Census of Agriculture.

Idaho Top Producer

As might be expected from its traditional ties to the potato, Idaho accounted for more than one-fourth of U.S. production in 1987, but had just 7 percent of America's potato farms.

Nationally, harvested acreage has declined somewhat since 1970, but average per-acre yields have risen 31 percent from 229 cwt per acre in 1970 to 301 cwt in 1987.

"This yield boost is the reason production has been able to increase by one-fifth since 1970," says Lucier.

Potatoes are grown commercially in 48 of the 50 states. The principal potato-growing areas are the states in a northern belt from Washington, Oregon, and Idaho to Maine, including Minnesota, Wisconsin, North Dakota, and New York. Other high-production states are California, Arizona, Florida, Texas, and Virginia. These states fill a small but important market niche for fresh potatoes during the winter, spring, and summer.

Climate controls potato production more than anything else. And although the potato is a cool-weather crop, it can't stand much frost. Also needed is well-distributed, moderate rainfall or irrigation. Too much rain is damaging, partly because it aids the development of late blight disease. When water supplies fluctuate widely, tubers (the edible potato) are likely to be misshapen or have other defects.

In 1987, notes Lucier, the top potato-producing states after Idaho were Washington, Oregon, Maine, and North Dakota.

Potatoes are major contributors to the farm economies of two of these states. In Maine, 1987 potato sales were 23 percent of total farm receipts, and in Idaho they comprised 12 percent of all farm sales.

Potatoes are produced during four distinct seasons, with the fall crop typically providing over 85 percent of the total. In the winter season, production comes from California and Florida.

"Producers of winter, spring, and summer potatoes usually receive the highest prices," Lucier says. "This is because their product competes with older fall storage potatoes in the United States and Canadian markets."

Lucier explains that "the fall potato crop, the largest crop of the four seasons, is the only one that can be stored because of the varieties produced. As the fall harvest increased between 1980 and 1987, prices have trended downward."

Potato Prices Lower

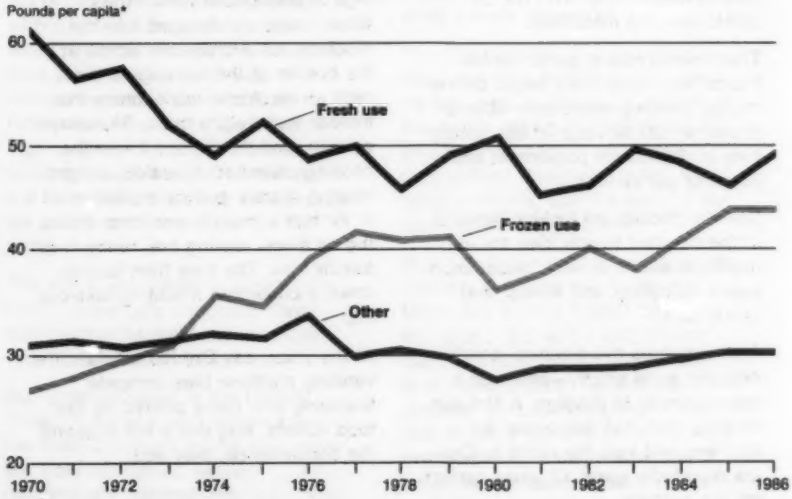
With large stocks available in the 1987/88 season, potato prices weakened. The preliminary 1987/88 season-average farm price for potatoes has been estimated at $4.47 per cwt.

"This is 10 percent below the average for the 1986/87 season," Lucier says. "Processing potatoes received a premium over fresh market potatoes this past season due partly to the presence of large stocks from the 1987 fall crop. These stocks depressed the fresh market since demand is relatively steady."

And the most popular potato? It's the Russet Burbank, which is grown on 98 percent of Idaho's potato acreage, 87 percent of Washington's acreage, and 85 percent of Oregon's acreage.

"While the Russet Burbank is also the most

The Decline in Use of Fresh Potatoes Seems to Have Halted, While Use of Frozen Potatoes Is the Highest Ever



*Figures are from USDA's Economic Research Service.

popular variety in Maine," says ERS economist Catherine Greene, "it accounted for only 24 percent of Maine's acreage. Other popular varieties in Maine in 1987 included Superior, Ontario, and Shepody. The Atlantic variety, which accounted for 16 percent of Pennsylvania's 1987 production, was designed for eastern conditions and could become more popular in other states."

The types of potatoes generally found on the market in the United States include long russet, long white, round russet, round white, and round red tubers. Many potato varieties grown 40 to 50 years ago have been replaced by new ones. The reasons for a variety's acceptance or rejection by producers and consumers are complex, but include yield, cooking and processing characteristics, appearance, and resistance to diseases.

Potato producers get a marketing boost from the National Potato Board, which is financed by a national potato checkoff program. The board spent about $4 million in fiscal year 1988 and plans to spend about $3.5 million in fiscal 1989 promoting potatoes and potato products in the United States.

Exports are promoted as well, under the Targeted Export Assistance (TEA) Program. "More than half of the $110 million TEA funds available in 1988 are targeted for promotion of horticultural products like potatoes," says economist Hamm. "In fiscal 1988, TEA funding specifically for potatoes was set at $2.4 million."

Aside from such promotion, the U.S. government has a fairly limited role in the American potato industry. The U.S. Department of Agriculture administers several potato marketing orders. All provide minimum size and grade requirements for potatoes marketed, while some also fund research and development, and packaging regulations.

Expanding the Export Market

In 1987, U.S. exporters sold 112,000 tons of frozen potatoes abroad, a 25-percent increase over the previous year. Japan took 87,000 tons of the total. Fresh potato exports grew 7 percent in 1987 to 155,000 metric tons. Of that, 151,000 tons went to Canada.

The potato industry is hoping that its success in selling to Japan will be repeated in another Pacific Rim country—South Korea.

For years, say industry analysts, South Korea has held off U.S. exporters of many farm products. Late this summer, though, South Korea lifted its import ban on frozen french fries, which are expected to be the most popular potato export to the country.

With a relatively young population—two-thirds are age 30 or under—and a booming economy, Korea is ready for much more variety in the diet.

Still unclear is the way that the U.S.-Canada potato trade will be affected by the "free trade" agreement awaiting ratification in the two countries. Currently, Canada is our largest customer for potato exports. It is also our biggest source of imported potatoes—some 224,000 metric tons last year.

"We imported 40 percent more potatoes in 1987," says Hamm, "nearly all from Canada. Canadian imports are heaviest during the fall and are concentrated in eastern U.S. markets for round white potatoes."

Despite this huge increase in imported potatoes, Hamm says, the United States continues to be a net potato exporter when frozen exports are also considered.

In the future, the potato industry can expect extensive changes, says Hamm. "The practices involved in potato production may be on the verge of the degree of change that transformed taste preferences from fresh to frozen use."

According to economist Greene, "improvements in potato varieties and production techniques are a major focus of the

Vending Machines Will Dispense French Fries

By next summer, the nation's biggest cities will boast one more feature of cosmopolitan living: french-fried potato vending machines.

That's when potato giant Ore-Ida Foods, Inc., says it will begin delivering the vending machines—able to dispense 200 servings of hot, crispy fries in 3½-ounce portions at about 75 cents per serving.

Ore-Ida officials are looking forward to the day that french fries are as readily available in work place lunchrooms as coffee, soft drinks, and candy bars.

And how does the machine work? Actually, quite simply—although it wasn't simple to develop. A McLean, Virginia, firm that developed the machine and sold the rights to Ore-Ida reportedly spent 12 years perfecting the process.

A freezer bin at the top of the machine is used to store 200 servings of pre-cooked french fries. When coins are dropped into the machine, an Archimedes screw at the bottom of the bin augers fries onto an electronic scale inside the freezer that weighs out a 3½-ounce serving, and then drops it into the cooking chamber. A sealed, airtight heating system pumps a quart of oil in for half a minute, and then drains the oil away, leaving hot, ready-to-eat french fries. The fries then tumble down a chute into a waiting take-out cup.

At the price, say Ore-Ida officials, the vending machine fries compete favorably with those offered by fast food outlets. And that's not counting the convenience, they add.

growing agricultural biotechnology industry. These firms are developing seed potato tubers and microtubers from tissue cultures, true potato seed, pest-resistant potato varieties, and biopesticides for major potato pests like the Colorado potato beetle."

She adds that "seed potato tubers, for example, have already been on the market for 3 years. These tubers are produced in commercial quantities faster than the conventional seed potatoes. And biopesticides that could protect potato crops—as well as newer pest-resistant varieties of potatoes—are currently undergoing field trials."□

[Based primarily on information supplied by economists Gary Lucier, Shannon Hamm, and Catherine Greene of the Commodity Economics Division, Economic Research Service.]

Potatoes: A 'Treasure' That Has Endured

The potato is one of the enduring treasures of the New World, as the Spanish conquistadors discovered in Peru in 1537.

After the conquistadors had confiscated all the gold they could find from Peru's Inca Indians, the plain potato remained—an abundant, renewable resource that could be shipped back to Europe as a new food crop without depriving Indians in the Peruvian highlands of a staple in their diet.

The English name itself was derived from the Spanish word "patata," originally given to the sweetpotato but also applied at the time to the potato.

Three centuries later, the potato's prime importance in some European countries was tragically demonstrated with the massive failure of the Irish potato crop from blight in 1845-46 and the widespread famine that followed. The potato blight blackened and withered potato stalks, leaving nothing behind but the terrible stench of rotting potatoes.

As many as 2-½ million men, women, and children perished in the potato famine—not simply from starvation but also from epidemic diseases such as typhus that came after the famine. A million more made their way to the United States, usually by tramp steamers, their passage paid by the promise of bartered labor for employers in the United States.

Ireland was also the source of the first potatoes introduced to North Americans. A group of Presbyterian Irish brought the potato along with them when they arrived in America in 1719 and settled near Londonderry, New Hampshire.

But acceptance was slowed by superstition that the potato was inherently harmful.

According to one 19th-century historian, "the prejudice was pretty general against them that they would shorten men's lives and make them unhealthy, and it was only when some people of the better sort chose to eat them as a palatable dish that the mass of the people were disposed to give them countenance."

Nowadays, potatoes are produced in far larger amounts around the world than any other vegetable. And their forms in food are as familiar as they are numerous: baked, roasted, boiled, mashed, french fried, creamed, hash browned; used in salads, stews, soups, potato pancakes, and pastries (blintzes); au gratin, curried, in souffles, in chowders, in croquettes, in dumplings, scalloped, and lyonnaise. They are also used now in the manufacturing of ice cream and vodka.

No picnic in America is complete without potato chips and potato salad. French fries are more popular than ever, and a newer treat is offered by potato skins (actually hollowed-out halves) ladled with fillings ranging from melted cheese to seasoned taco meat. And then there are the nonfood uses as well—mainly the starch used in production of paper.

The key to the potato's versatility: a bland, universally adaptable flavor that permits frequent use in meals with no objectionable monotony.

But potatoes eaten in the United States today are a lot different from the ones cultivated by the Inca when the Spanish arrived. Modern potatoes are painstakingly bred. And what's the end result of all this effort at crossbreeding different varieties to create super-spuds: a smoother-skinned potato with better flavor, texture, and productivity.

Then, too, consumer interest is prodding producers to grow new and sometimes exotic varieties.

"The interest in specialty vegetables has stimulated potato growers in various parts of the country to plant a small amount of acreage to purple or yellow-fleshed varieties like Yukon Gold, and to try marketing small and baby potatoes," says USDA economist Catherine Greene.

Per capita consumption has come down in the United States, largely because of the wider variety and availability of many other foods, including fresh fruits and vegetables. In 1910, the per capita use of potatoes for human food in all forms was 198 pounds. In 1987, it was 118.7 pounds.

But what isn't likely to change is the potato's pre-eminence as the world's most popular vegetable.

In some cultures, that importance has inspired a quasi-mystical status. As long ago as 200 A.D., Indians of the Andes region in present-day Peru and Bolivia sculpted potatoes on their pottery. They also made many types of flasks, with the body of the flask representing a potato.

In our own day (and country), potato festivals in places like Idaho and Maine are a more typical tribute to the potato. But some enterprising Idahoans have turned the potato itself into a tribute. For that all-purpose, all-occasion present, they offer a gift of Idaho's finest—boxed, wrapped, and ready to send like a jumbo box of chocolates.

Buyers of Farmland Are Mostly Farmers

Every year, some of the farmers leave the land, but the land, for the most part, is not leaving agriculture.

When farmland is sold, the buyer is most frequently another farmer. Even when the buyer isn't, farming is usually the intended use for at least the next several years, according to economist Roger Hexem of USDA's Economic Research Service. This continuity of ownership and use appears to be holding firm during the latter half of the 1980's, and it is particularly evident in the nation's major farming regions.

For confirmation, Hexem points to ERS's latest Farmland Market Survey. The 1988 survey provides detailed information on reported sales that occurred between September 1, 1987 and February 1, 1988. These sales encompassed 7,150 transactions involving around 2.3 million acres. The information, covering all states except Alaska and Hawaii, was provided by real estate brokers and appraisers, commercial and federal lending officials, and farmers and ranchers.

Overall, the survey results do not point to any dramatic shifts in the use or ownership of U.S. farmland. Only a small percentage, maybe 2 to 4 percent, of all agricultural land changes hands annually, and the majority of buyers are farm operators, Hexem says.

Who Is Buying the Land?

In the transactions reported in the 1988 survey, 64 percent of the farmland was bought by farmers who already owned and operated farmland at the time of purchase. A year earlier, 60 percent of the acreage was bought by farmers, and in 1986, 65 percent. Hexem says that another 10 percent of the 1988 survey acreage was bought by tenants, and 1 percent by retired farmers.

"Nonfarmers," including individuals and nonfarm businesses, were also active in the market, accounting for 25 percent of the acreage bought and 30 percent of all reported purchases. Nonfarmers have accounted for 25 to 30 percent of the acreage involved in reported purchases throughout the 1980's. In 1982, according to the Census of Agriculture, around 36 percent of U.S. farmland was owned by individuals and groups not actively farming the land.

The survey results do not point to any dramatic shifts in the use or ownership of U.S. farmland.

Nonfarmers buy farmland for various purposes, Hexem says. Some may be entering farming. Some invest in land and then rent the acreage to existing producers. Some buy land enrolled in the Conservation Reserve Program. Still others speculate in the land market or develop the land for residential, commercial, or industrial uses.

The proportion of acres bought for nonagricultural uses varies among regions. Nonfarm activity is often highest in the Northeast, Appalachia, and Southeast, where nonfarm buyers and nonagricultural uses figure more prominently. On average, reported sales in these regions involved considerably fewer acres per parcel according to the 1988 survey (about 141 acres in the Northeast, 115 in Appalachia, and 194 in the Southeast, compared with 317 as the U.S. average). Prices were also higher ($1,768, $951, and $1,253, respectively, compared with $566 per acre nationally).

Farmers Account for a Fairly Stable Majority of Acres Purchased Nationwide, But Their Share Varies Sharply by Region

	Type of buyer		
	Farmer owner-operators	Non-farmers	Tenants & others[1]
	percentage of acres purchased[2]		
48 states			
1986	65	25	10
1987	60	31	9
1988	64	25	11
Regions, 1988			
Pacific	80	16	4
Mountain	78	16	5
No. Plains	63	20	17
So. Plains	54	30	16
Delta States	54	36	10
Lake States	52	25	24
Corn Belt	57	29	14
Northeast	41	37	23
Appalachia	51	41	8
Southeast	42	56	2

[1]Includes retired farmers. [2]Data are based on reported sales during the 5 months ending Feb. 1 of the year indicated. Percentages may not add to exactly 100% because of rounding.

The share of acreage purchased by farm owner-operators ranged from a high of 80 percent in the Pacific region to a low of 41 percent in the Northeast. The U.S. average was 64 percent. Producers have been relatively less active in the Northeast and Southeast markets for most of the 1980's. For example, the amount of acreage reportedly bought by owner-operators in the Northeast fell from 59 percent in 1983 to 41 percent in 1988. In the Southeast, it dropped from 71 percent in 1983 to 42 percent. At the same time, acreage bought by nonfarmers in the Southeast rose from 23 percent in 1983 to 55 percent this year.

Part of this trend is a result of the greater demand for land along the East Coast from nonagricultural sources, Hexem says. The urbanization of large areas surrounding such cities as New York, Boston, Pittsburgh, Philadelphia, Baltimore, Washington, D.C., Atlanta, and Miami has raised the demand for primary and secondary homes, shopping centers, office complexes, industrial centers, roads, and airports. This demand, together with the demand in rural areas for the second homes, retirement homes, and recreational uses, has helped maintain or raise the value of all land, the economist says.

However, Hexem points out that most of the transferred farmland is expected to continue in agricultural production at least for the foreseeable future.

According to survey respondents, about 91 percent (nationwide) of the recently sold farmland would probably remain in agriculture for the next 5 years. They expected that another 1 percent would go into forestry and about 8 percent to other

uses, including housing, recreation, and commercial and industrial sites.

Farming the Land

Where is the land staying in farming? Hexem says that land in the Lake States, Corn Belt, Northern Plains, Mountain, and Pacific regions appears most likely to remain in farming 5 years after changing ownership, according to survey respondents. One likely reason, he explains, is that farming predominates in these areas, with less competition from other land uses than in the Northeast, Appalachia, and Southeast.

The survey also highlights other developments, the economist says. Between 1987 and 1988, there was an increase in the acres per parcel sold and a decrease in the average price per acre of reported sales. In 1988, sales averaged 317 acres per transaction nationwide, up from 236 acres in 1987. Prices during the period dropped to $566 an acre, down from $607 an acre in 1987, says Hexem. Some of this can be attributed to several large tracts of land, likely rangeland, sold at relatively low prices in the Mountain and Southern Plains regions.

"While accounting for only 13 percent of the transactions, these two regions were responsible for 45 percent of the acreage that changed hands," Hexem says.

Another trend supported by the survey is that buyers have been acquiring land with less credit, many using cash instead. In 1988, 70 percent of the purchases were financed, down from 73 percent last year, and 90 percent in the late 1970's and early 1980's. "The 70 percent is comparable to financing levels of the early 1960's," the economist says.

The data show that credit-financed sales remained the most predominant in the Northeast, Lake States, and Mountain regions. Cash sales increased in the Corn Belt, Appalachia, and the Southeast during 1987-88.

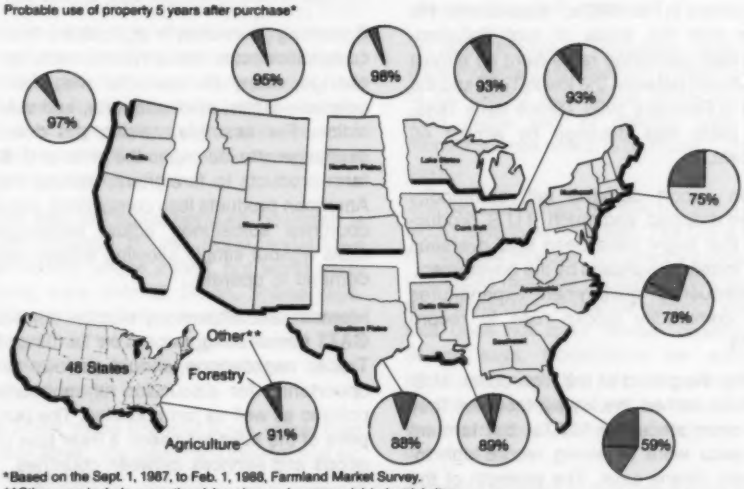
"When buyers do finance, they have increasingly turned to commercial banks for loans in recent years," Hexem says. According to the 1988 survey, commercial banks supplied around 32 percent of credit extended for reported sales, up from 28 percent in 1987 and only 4 percent in 1980-82. This likely reflects the improved financial conditions of many rural and other banks, some of which may now be more willing to provide financing for farmland purchases.

It also reflects a cutback in lending by the Farm Credit System and insurance companies, partly due to financial difficulties experienced by some of these institutions in the mid-1980's, Hexem says. Seller financing has also been less prevalent in recent years, he adds. □

[Based on data provided by economist Roger Hexem of the Resources and Technology Division, Economic Research Service.]

Planned Uses Vary by Region, But Most of the Land Is Expected to Remain in Agriculture

Probable use of property 5 years after purchase*



*Based on the Sept. 1, 1987, to Feb. 1, 1988, Farmland Market Survey.
**Other uses include recreational, housing, and commercial-industrial sites.

Monetary Policies Crucial to Farm Trade

Rising exchange rates and interest costs contributed to the declining exports of U.S. farm products in the first half of the 1980's. Several analysts in USDA's Economic Research Service suggest that these factors should be taken into account in agricultural trade talks.

For many American farmers, the rising exchange rates were a painful lesson in the workings of the international monetary system. And they were evidence that the monetary system can have a substantial effect on farm trade and the general welfare of agriculture.

Consider one example of a strengthening dollar: During the fourth quarter of 1979, the exchange rate was 1.77 West German marks for 1 U.S. dollar. In the first quarter of 1985, the rate had risen to 3.26 marks per dollar. Thus, a $3 bushel of U.S. wheat cost 5.30 marks in 1979 but nearly 10 marks in 1985. (Similar fluctuations in exchange rates of other currencies also have occurred during the 1980's.)

Why was the dollar "stronger" at that particular time? Why did it take more marks (or yen, pesos, or other currencies) to secure a dollar? The supply and demand for foreign exchange provide a partial explanation. Other factors include monetary policies, interest rates, government budget deficits, and the rate of inflation.

Individual countries alter monetary policy by increasing or decreasing the domestic supply of money. The supply of money affects interest rates and exchange rates.

Increasing interest rates were a major problem not too many years ago. It began with contractionary monetary policies that were adopted by the major developed countries after the oil price shock of 1979-80.

The U.S. Federal Reserve Board, for example, sought to counteract inflation by tightening the money supply. This led to higher interest rates and, eventually, a strengthening of the dollar. Both factors have an influence on domestic prices and trade.

"Both farm policies and monetary policies have distorted price signals to farmers."

Increasing Influence

Among the economists who studied these effects are Stephen W. Hiemstra and Mathew Shane of the ERS. They note that in recent years there has been an increase in the influence of monetary policy on agriculture. And they conclude that freer trade in farm commodities may depend not only on international agreements on agricultural policies, but on monetary policies as well.

"Both farm policies and monetary policies have distorted price signals to farmers that are usually based on comparative advantage," Shane says.

This was illustrated by the series of events that included the rise of the U.S. dollar from 1979 to 1985 and the increase in interest rates from 1979 to 1982.

"Wide swings in the value of the U.S. dollar have been a major problem for world agriculture in the 1980's," says Shane. He adds that the index of real (inflation-adjusted) exchange rates went up almost 60 percent between the low in 1979 and the high in February 1985. (Since early 1985, the index has declined by almost 40 percent.)

When export demand fell, commodity prices dropped, and much of U.S. production that might have been sold overseas was instead purchased by the government. Consequently, government expenditures and commodity stocks rose to record levels.

During the period of the high dollar, U.S. farmers earned the lowest incomes they had seen since the 1930's, but farmers overseas were receiving record-high incomes, Shane says. The strength of the dollar, and the comparative weakness of other currencies, translated into higher earnings for foreign farmers.

For developing countries with large debts, the rising interest rates boosted the cost of debt service at a time when falling commodity prices were cutting export earnings. And the loans were in dollars, which were becoming more valuable. Thus, these countries had to reduce their imports, putting additional downward pressure on international commodity prices.

"Many of these developing countries still face substantial debt servicing problems," Shane says, adding that their imports therefore are still lagging despite the weakening of the dollar and the lower prices resulting from the 1985 U.S. farm bill.

World Production Expanded

The stronger dollar had another consequence. Many developed countries expanded their farm production, when they saw an opportunity to take some of the markets that had been outlets for U.S. products. The additional production added to the problem of surplus stocks of several commodities.

Many governments subsequently increased their intervention in agriculture, to protect their farmers and the enlarged production levels, Hiemstra and Shane say.

Protecting a country's agriculture from competition can be achieved with exchange rates as well as with farm policies—tariffs, price supports, and subsidies. For example, raising the dollar exchange rate increases the price of U.S. farm products to foreigners, making the American products less competitive. (And countries sometimes adjust exchange rates without simply allowing supply and demand to operate.)

Hiemstra and Shane say that the current GATT (General Agreement on Tariffs and Trade) negotiations should provide an opportunity for discussion of monetary policies as well as farm policies. The purpose of the talks is to seek a freer flow of goods and services between countries.

"The linkage between agricultural policies and monetary issues adds to the complexity of the GATT talks," Hiemstra says.

This could be seen as a widening of GATT's role, for it has rarely stepped outside its traditional concern of trade matters. But it is obvious that monetary policies can help or hinder trade, Hiemstra says.

Flow of Capital Much Larger

Another complicating factor in international monetary concerns is the much greater ease with which capital now moves between countries. Shane notes that circumstances changed with the development of the Eurodollar market in the 1960's and the growth of European and Asian currency markets in the 1970's in response to the influx of funds from the suddenly enriched oil exporters.

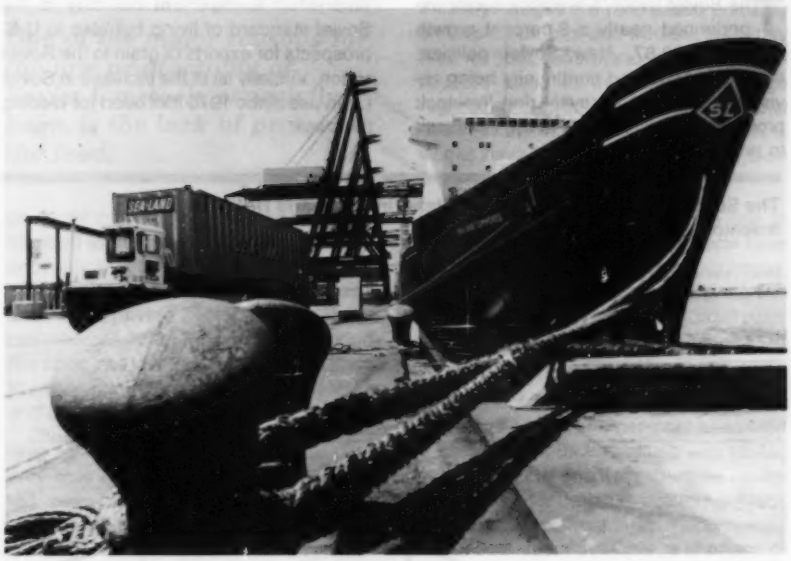
Governments now have less control over the movement of capital. Private capital can significantly affect exchange rates, interest rates, trade, and agriculture, the economists point out.

Development of a flexible exchange rate system was one outgrowth of the new international currency markets. And such a system put more of the burden of monetary adjustments on commodity markets, Shane says.

"This is because monetary adjustments not only affect foreign exchange and financial markets, but the commodity exchange markets as well," the economist explains. "Changes in the monetary policy of the Federal Reserve System lead to changes in exchange rates, and this alters the competitiveness of our agricultural products in foreign markets."

The flow of capital between countries is now immense. In 1985, world capital flows amounted to $84 trillion, but world trade flows were only $2 trillion, Shane says. "The private flows of capital are of such magnitude that even governments can't control their exchange rates over an extended length of time."

In effect, these financial flows, rather than trade flows, now determine interest and exchange rates.



GATT Could Play a Role

Hiemstra and Shane have identified possible courses of action that could help alleviate the problems of monetary policies having adverse effects on agricultural trade. They are thinking in terms of negotiated agreements on stabilizing exchange rates through GATT.

"If large swings in exchange rates and other monetary variables are a major cause of increasing agricultural protectionism, then some way of dealing with the monetary issue needs to be found," Shane says.

The two economists list four problems that would have to be dealt with. The first is how to measure changes in currency exchange valuations between countries. "We would need a measure of relative currency values that does not favor certain countries," Shane says. Possibilities for such a measure include the price of gold, an index of commodity prices, or the value of the International Monetary Fund's special drawing rights.

A second problem is choosing a base year. An average of several years probably would be best, Shane says, because of the large swings in currency values during the last few years.

The third problem is that any agreement reached by GATT members must be insulated from future currency changes. In other words, countries must not be allowed to reverse the effects of an agreement by manipulating monetary factors.

The fourth problem is agreement on a transition process. "If large currency adjustments are required, then a gradual implementation of the negotiated currency values may be as important as a gradual implementation of trade concessions," Shane says.

It has been made painfully obvious during the 1980's that monetary developments and policies can disrupt agricultural trade, distort market signals, and add to protectionist pressures. The monetary issues will be difficult to avoid if GATT nations move ahead on proposals to substantially reduce or eliminate global barriers in farm trade. □

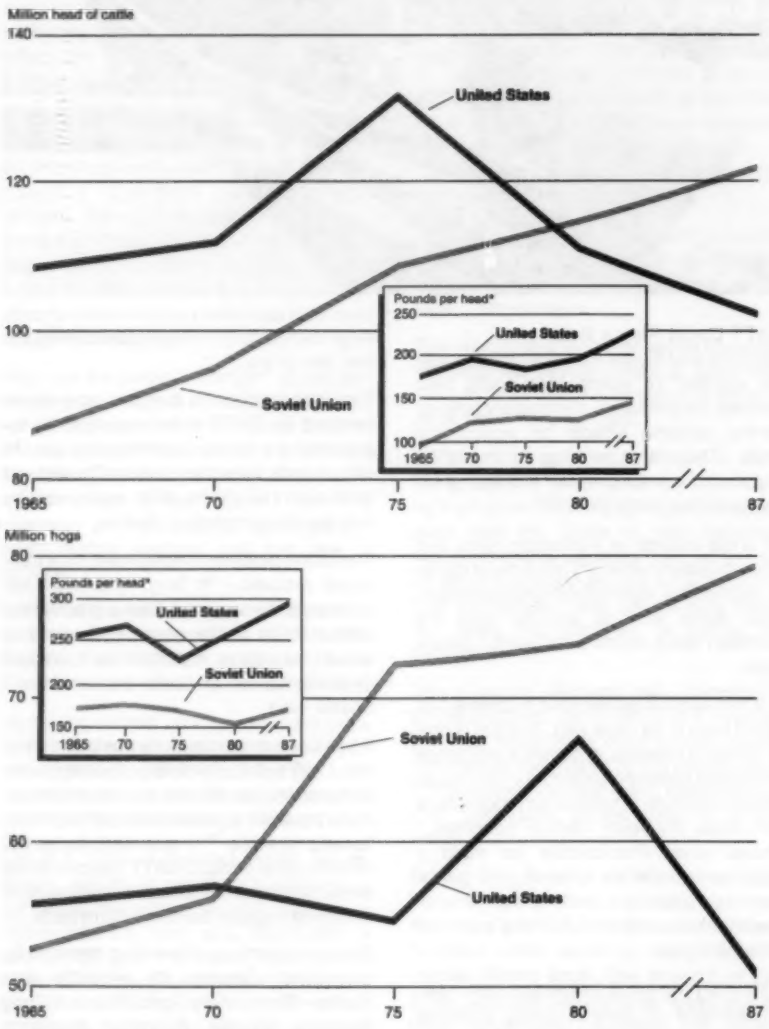
[Based primarily on information provided by economists Stephen W. Hiemstra and Mathew Shane of the Agriculture and Rural Economy Division, Economic Research Service.]

Soviet Livestock Productivity Lagging

The Soviet Union's livestock sector experienced nearly a 3-percent growth rate in 1983-87. New Soviet policies, started in 1982 and continually being revised, are aimed at revitalizing livestock production growth and curtailing increases in production costs.

This effort is important not only to the Soviet standard of living but also to U.S. prospects for exports of grain to the Soviet Union. Virtually all of the increase in Soviet grain use since 1970 has been for feeding livestock.

The Soviet Union Leads the United States in Cattle and Hog Inventories, But Not in Productivity



*Annual production divided by beginning-year inventory.

Soviet cattle, hog, and poultry inventories have grown considerably. But the numbers are deceiving: compared with the United States, productivity is lagging.

In 1985, Soviet meat production was roughly one-third lower than U.S. production, even though inventories of cattle have exceeded the U.S. total since 1979. The Soviet Union had 120 million head compared to 110 million here, but U.S. beef and veal production per head of cattle, was nearly 60 percent higher. Since the 1970's, Soviet productivity per head of cattle has improved only marginally.

The disparities were even greater in hogs. The Soviets have been raising more hogs and pigs than we have since 1971. In 1985, they had about 78 million head compared to our 55 million. But U.S. pork production per hog exceeded the USSR by about 70 percent, and Soviet productivity per hog has declined since 1970.

Poultry and milk output also lag. In 1985, the average daily weight gains for U.S. broilers were almost double those of Soviet broilers, and U.S. milk production per cow was more than double.

Edward Cook, an economist in USDA's Economic Research Service, says the primary goal of General Secretary Mikhail Gorbachev's economic reform policy concerning livestock is to boost productivity rather than inventories. Gorbachev's emphasis is to put production on an "intensive" growth path—in other words, to generate more output per head without expanding inventories.

During the last 20 years, 25 percent of Soviet investment, and an equal portion of labor, have been devoted to agriculture. The goal of the investment is to modernize livestock operations on state and collective farms. However, Cook says, the results have been disappointing. Costly investments were made (production costs of beef tripled and those of milk and pork doubled between 1965 and 1985). But the animals still have approximately half the daily weight gain of U.S. livestock, drawing out birth-to-slaughter times to nearly twice those in the United States. They also have lower average slaughter weights.

ERS analysts say that from 1965 to 1980, Soviet strategy centered on increasing investment in housing, while investment in feed production, handling and storage was neglected.

Most of the cattle are dual-purpose breeds (dairy and beef) such as Simmenthal, black and white, and the red steppe. Only about 3 percent are beef cattle.

Milk yields from the dual-purpose breeds have been increasing since the early 1980's. But the Soviets have a problem with processing, storing, and handling the quantities. Consequently, cow numbers are being gradually reduced. This has also eliminated much of the base for beef production. So the burden of expanding beef productivity falls on increasing both calving rates and the rate of weight gain.

Lack of Protein Critical

One of the major reasons for the low productivity of Soviet livestock, especially in hogs, is the lack of protein in the feed. Soviet farmers are using a large proportion of low-quality hog feeds and inappropriate mixes, says Cook.

The quality of cattle feed must also improve in order to achieve desired production. In 1978, when the Soviets began to pay more attention to roughages for feed, they saved what could have amounted to millions of tons of imported grain. However, a large share to the roughage, such as hay and silage, was of such low quality that it contributed little to animal productivity.

"There is reason to question whether roughage quality and quantity can be increased enough to achieve the desired productivity increases," says Cook. "Because of problems with harvesting and storing roughage feeds, the feed value is frequently well below what it should be."

The Soviets recognized the problem and have shifted investment priority from construction of livestock housing to the creation of a more reliable feed base. But they are still short of reaching their potential, says Cook.

Poultry production has been relatively successful, says Cook. Over 56 percent of all poultry meat and 60 percent of eggs are produced in the state poultry industry trust, founded in the mid-1960's, to modernize poultry production. The remaining poultry is produced on state and collective farms and in the private sector. The trust has been successful in holding down production costs and feed requirements due partly to its top priority in receiving mixed feeds and other inputs from the state.

One of the major reasons for the low productivity of Soviet livestock, especially in hogs, is the lack of protein in the feed.

Help for Private Plots

Very little of the modernization program has been devoted to improving private household plots, which account for over 30 percent of the USSR's livestock production.

There are roughly 33.8 million private household plots in the USSR, averaging about one-half acre. About 80 percent of these raise livestock. However, the size of the plots precludes growing adequate feed, so households must arrange for feed from the socialized sector.

Activity on private plots was frequently discouraged by the government because private plot farming was considered a conflict of interest with socialized agriculture, says Cook. The notion was that the more involved workers became in private plots, the more likely they were to shirk their responsibilities on socialized farms.

The result was a series of sometimes favorable, sometimes unfavorable, policies. But recent policy to expand agricultural production has generally encouraged the use of private plots and has reduced some of the traditional barriers.

ERS analysts cite several other reasons for the increasing costs and disappointing performance of the livestock sector. First of all, the universal incentives for good performance—wages—have been low.

State farm laborers normally work during specific hours, much like shift workers in industry. Wages are paid based primarily on time on the job, and workers are rarely fired for poor performance. Wages generally are close to the national average regardless of productivity or the financial health of the farm. Since the mid-1960's, wages have increased more rapidly than productivity.

Other problems contribute to the rise in production costs. Investment projects have been poorly coordinated. For example, although great improvements have been made in the mechanization of certain parts of a farm's operation, other areas are left unmechanized.

Suppliers of farm machinery and services have a monopoly and have not been held accountable in their dealings with farms, resulting in low quality, expensive equipment, and poor timing of deliveries. Cook says that often there is an inappropriate mix of machinery available, a shortage of spare parts, and an irregular supply of electricity from the state power network.

Despite some mechanization in the livestock sector, manual labor fills large gaps. Machines are used in only 40 percent of the work in hog production, and 50 percent of milk production.

Also, regional self-sufficiency has been emphasized rather than specialization. In 1985, the typical state and collective farm had 1,900 head of cattle, 600 of which were cows, and 1,140 hogs, with a large share of farms close to these averages. Annual goals for sales to the state force individual farms to maintain a full range of livestock products. Inadequate transportation and a poor system of roads make it difficult to move livestock products from low-cost to high-cost regions.

Cook says there has not been a lag in meat and milk production compared with population growth. Indeed, between 1965 and 1985, meat output increased 2.75 percent, and milk 1.5 percent annually, both faster than the rise in population. Rather, it's a case of increases in Soviet real income combined with a policy of relatively stable retail prices that have precipitated greater demand for livestock products.

(continued on next page)

As production costs increased much faster than retail prices, food subsidies have reached over $80 billion per year and are a burden to the national budget. But if subsidies were eliminated, as Cook says they might possibly be in the future, food prices would go up more than 100 percent. This would curtail meat consumption.

In spite of the problems with subsidies and meat shortages, the Soviet diet has improved. From 1985 to 1987, Soviets consumed 140 pounds of meat (carcass-weight equivalent) per capita annually, a little over half as much as the 244 pounds of meat Americans consume and only about 18 percent below the average meat consumption of the European Community countries.

Soviet consumption of dairy products has remained fairly constant around 700 pounds per capita since 1975, (milk equivalent), and the number of eggs consumed per capita has increased from 216 in 1975 to 256 in 1984.

Prospects and Future Goals

Cook says that based on the performance of U.S. and European livestock, Soviet herds could produce much more meat and milk. New policies may improve performance compared with the late 1970's and early 1980's, but full production potential is likely to remain unrealized without significant changes in Soviet agriculture.

Probably the first priority should be to improve the quality and quantity of feed and to increase the genetic potential of the livestock, says Cook.

The Soviet Union has adopted a number of policies since 1982 to increase domestic protein production, such as: expanding oilseed and pulse crops; shifting roughage crop area away from grasses to higher protein leguminous crops, such as alfalfa and clover; and expanding production of single cell protein to be used in mixed feeds.

In 1983, the Soviets reduced imports of protein meals, particularly soybeans, in the hope of becoming self-sufficient. Cook says that the results were only partly successful, and the protein shortages in feed persisted.

The Soviets responded by increasing imports of soybean meal in 1985. They are also stressing beef production, rather than pork, so that there is less reliance on imported protein feed. The effect on livestock productivity has been noticeable, says Cook.

Improvements in feed supplies alone may prove adequate to realize planned livestock growth rates. Despite the recent upsurge in protein feed imports, more is needed to fully balance Soviet mixed feeds. The state mixed-feed industry also provides farms with protein concentrates for mixing with grain and other energy feeds. Production and the quality of such protein concentrates, however, must increase significantly for Soviet livestock "intensification" to be successful, says Cook.

The larger protein feed imports should limit grain feeding, says Cook. However, there is good reason to believe that grain feeding, also, will continue to increase. Gorbachev's plan to increase livestock production may require renewed emphasis on grain in cattle rations. Grain feeding did increase in 1985 and 1986, and contributed to the 1986-87 upturn in the livestock sector performance.

However, ERS analysts say, grain imports may gradually drop from the current average of nearly 30 million tons per year. The Soviets are taking steps to become more self-reliant in grain production. They have increased their use of fertilizer and are using pesticides more carefully. Also, the addition of protein in hog rations should decrease the grain requirement for hog feed and possibly add to the grain available for cattle.

There is tremendous potential for improvement in the livestock sector, says Cook, but it will take commitment from the Soviet government. Cook suggests that these changes could include: more flexible prices to improve resource allocation, more independence for farm operators, closer coordination between wage payments and labor productivity, increased specialization of livestock production, greater responsiveness of input and service suppliers to farm needs, improved technical training of the workforce, increased incentives for farm managers to improve performance through increased rights to retain profits on the farm, and elimination of bail-outs for unprofitable livestock operations. □

[Based primarily on information supplied by economist Edward C. Cook of the Agriculture and Trade Analysis Division, Economic Research Service.]

The Dollar's Value And Farm Exports

As anyone familiar with the role of exchange rates in international trade knows, a weaker American dollar tends to stimulate imports of U.S. products by other nations.

But that's not always true. With some less developed countries particularly, a weaker dollar may depress imports, according to a recent study by economist Mary Burfisher. Such cases, she says, may be numerous enough to alter trade forecasts that are based on conventional notions.

The conventional reasoning is this: When the value of the U.S. dollar falls, American products become less expensive for those nations with stronger currencies. Their currencies buy more dollars, and their increased buying power often results in greater demand for U.S. goods, including our agricultural exports.

Less developed countries, however, must conduct their trade in internationally accepted currencies, such as the U.S. dollar, Japanese yen, West German mark, and French franc. The prices they receive for their exports and the prices they pay for their imports are based on these hard currencies.

When the dollar declines, as it has since 1985, that's bad news for a country which exports mainly to the United States and gets the bulk of its imports from, say, Japan and West Germany. As the dollars earned from exports lose value, it takes more of those dollars to buy imports that are priced in yen or marks.

For countries in this situation, the loss of purchasing power in world markets tends to constrain overall imports, including products that may be coming from the United States.

In her report, Burfisher estimates how changes in the dollar's value affect imports by 14 less developed countries. These markets took almost 50 percent of total U.S. agricultural exports to all less developed countries in 1986.

Her findings: Seven of the 14 depend on exports that are priced mainly in dollars, and on imports priced mostly in other hard currencies. For the seven, a weaker dollar is likely to reduce import demand.

How the Dollar's Value Affects U.S. Farm Exports to Developing Countries *by Mary Burfisher. (Published July 1988; 20 pages; GPO Stock No. 001-019-00593-9; $1.50.)*

Food Marketing System Examined

Around 600,000 separate firms, more than $600 billion in sales of food and other grocery products, $10 billion worth of advertising, and almost 13 million full-time and part-time employees—that's the U.S. food marketing system.

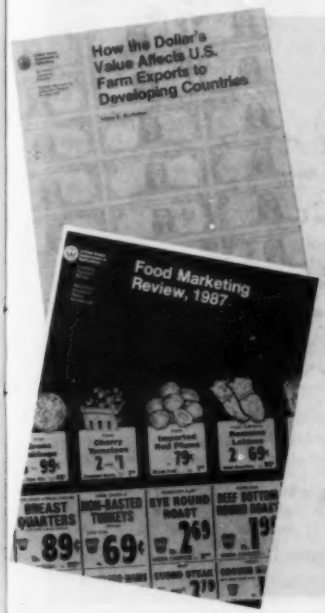
It includes food manufacturers, wholesalers, grocery stores, and restaurants and other eating places. These businesses, big and small, compete in a dynamic marketplace marked by mergers and divestitures, new products, new marketing concepts, and the ever-changing demands of consumers.

This report analyzes recent developments in the food marketing system. The many subjects covered include:

- trends in sales and profits.
- new product introductions and the competition for shelf space.
- the industry's performance in international markets and the inroads by processed food imports.
- U.S. investment abroad and foreign investment in the U.S. food system.
- mergers and divestitures among food firms.
- competition and market concentration.
- trends in employment, wage rates, and productivity.

The report is divided into separate sections on market size, food manufacturing, wholesaling, retailing, and food service. The analysis is supported by charts and data tables throughout.

Food Marketing Review, 1987. *(Published August 1988; 122 pages; GPO Stock No. 001-019-00594-7; $6.00.)*



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Farm Numbers Falling More Slowly

The number of American farms is still shrinking, but the downward trend has slowed in the last 2 years, according to the latest figures from USDA's National Agricultural Statistics Service.

The preliminary 1988 estimate is 2,158,800 farms nationwide as of June 1. That's 17,310 fewer than on June 1, 1987.

The 0.8-percent drop represents a substantial slowdown in the annual rate at which farms appear to be leaving the sector. The rate was twice as high (1.6 percent) during the year ending in June 1987, and much higher the year before.

In recent history, falling farm numbers have been the norm. Numbers reached a peak of 6.8 million in 1935 and then went into a steady descent that continued, without interruption, until the 1980's.

The late 1970's and early 1980's brought some relative stability to farm numbers. In fact, the 1980's began with the first increase in the farm count in 45 years. This was followed by another small gain the next year. Even when the downward trend resumed, the declines were fairly modest—1.4 percent in 1982 and 1.3 percent in 1983.

The rate, however, accelerated between 1984 and 1986, years of "debt crisis" and further deterioration in the farm financial picture. Numbers were down 1.8 percent in 1984, 2.3 percent in 1985, and a sharp 2.8 percent in 1986. The 1986 figure was reminiscent of the rapid migration out of agriculture during the 1950's and 1960's.

USDA analysts say it will take several more years to determine whether farm numbers have actually started to stabilize—or whether the slowing rate of exit over the last 2 years is just another temporary lull. For five decades now, the burgeoning domestic and foreign demand for America's food, feed, and fiber has been met by an ever-smaller number of farms that have grown enormously both in size and productivity.

The 1988 estimates show that average farm size has increased to a record 463 acres, up from 461 last year. Average size was 427 acres in 1980 and 213 back in 1950. As farm numbers trend downward, much of the land is absorbed by other farms, resulting in steady gains in average acreage per farm.

Total land in U.S. farms has slipped below a billion acres for the first time since USDA began making those estimates in 1950. However, the 0.4-percent drop—to 999 million acres as of June 1—is only half the rate of decline in farm numbers.

Although 24 states have fewer farms than they did last year, farm numbers are up in 9 states and unchanged in 17. Increases are reported for Colorado, Minnesota, Wisconsin, Georgia, South Carolina, Florida, New Hampshire, Massachusetts, and Hawaii.

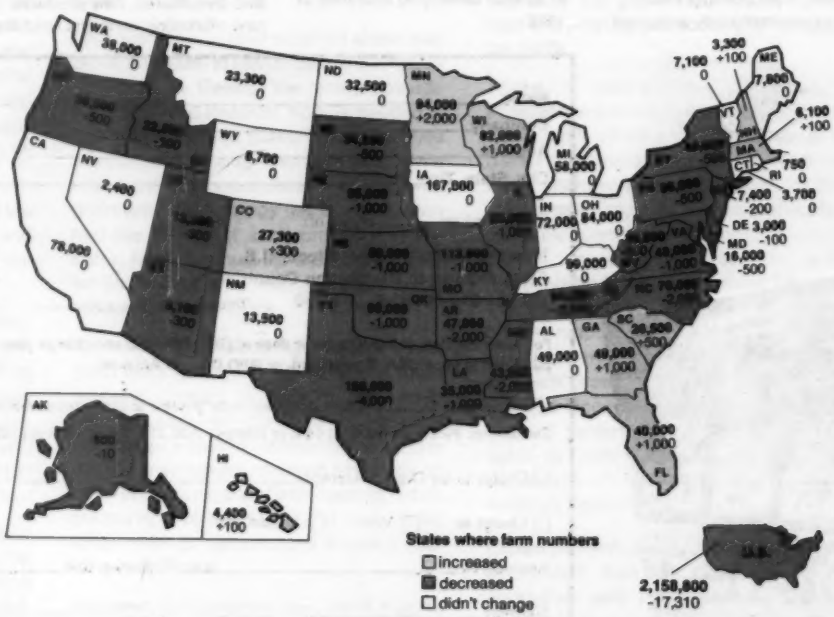
Declines of about 2,000 farms each are reported for Arkansas, Mississippi, North Carolina, and Tennessee. Texas, which has more farms (156,000) than any other state, lost an estimated 4,000 farms between 1987 and 1988. Since 1980, the number of farms in Texas has dropped by 33,000.

According to the 1988 data, 51 percent of U.S. farms have annual farm product sales of less than $10,000 (at least $1,000 in "normal" sales are required to officially qualify as a farm). Although numerically the majority, these farms control less than 12 percent of all land in farms.

Operations with sales of $100,000 or more make up less than 15 percent of U.S. farms, but they control 51 percent of all land in farms.

Farm Numbers Are Up in 9 States, Down in 24 States, and Unchanged in 17

Estimated number of farms as of June 1, 1988, and change from June 1, 1987:



Farm Household Income Similar to Nonfarm

Until the 1970's, the nation's farm operator households lagged behind the U.S. average in household incomes. Today, their incomes remain much more volatile than the steadily rising U.S. average, but no longer are they always in the bottom position.

In fact, Economic Research Service analysts are calling 1986 a year of "historically high" income for farm operator households. Their average 1986 income was $34,246, 11 percent higher than the $30,759-average for all U.S. households.

Farm operator household income exceeded the U.S. average in 8 of the 17 years between 1970 and 1986. Six of those 8 years were during the 1970's.

The first time that farm operator household income exceeded the U.S. average was in 1972. In that year, farm operator household incomes went from 5 percent below to 9 percent above the U.S. average. During the early 1970's, the United States was experiencing an export boom, says ERS analyst Donn Reimund, so that, in 1973, farm operator household income soared to 47 percent above the U.S. average, a level that has not been matched since.

After 1974, the ratio of farm income to the U.S. average declined until 1977 when it fell to 8 percent below the U.S. average. In 1978, farm operator income again moved above the U.S. average, and then fell sharply below in the early 1980's. "Those were the years of financial stress in most of the farm sector," says Nora Brooks, another ERS analyst.

After trailing for 6 straight years, farm operator household income again moved ahead of the average U.S. household income in 1985 and widened its lead in 1986. ERS analysts attribute the rise in farm operator household income in 1985 and 1986 to lower production costs and higher direct government payments to farmers. Also adding to the increased income were the additional wages that farm household members earned in jobs off the farm.

Federal payments to farmers were $8 billion in 1985 and rose to $12 billion by 1986. In 1981, direct government payments to farmers were only $1.9 billion.

Of course, comparison of average incomes does not address the issue of income distribution and can mask differences at the very high and low levels, says Reimund. "For example, we know that a higher percent of farm operator households are below the official poverty level than are other households."

Off-farm income is of increasing importance to the financial well-being of the farm sector. Only about 16 percent of farm operator households reported receiving no off-farm income in 1986. (This estimate and the remainder of the data reported in this article are based on USDA's 1986 Farm Costs and Returns Survey. About 1.5 million of the nation's 2.2 million farms were represented by the survey sample. Smaller farms were the ones most likely to be underrepresented.)

"Although many observers and analysts previously considered off-farm employment as a transitional step to full-time farm operation," says Reimund, "off-farm employment is becoming more common as farm operators and members of their households choose to pursue dual careers."

ERS analyst Mary Ahearn says that about half of the farm operator households in 1986 depended on off-farm sources for two-thirds or more of their total cash household income. These households were generally involved in small operations with sales of less than $40,000 per year. On average, they incurred a $2,950 loss on the farm operation, but earned $40,904 off the farm, bringing the farm household's total cash income to $37,954.

Only 20 percent of the households in this group participated in direct payment programs and they averaged $6,380 each. Their small size precluded their receiving larger payments, because payments are related to production.

In 1986, 40 percent of all farm operator households depended on agriculture for the majority of their incomes. These households had an average income of only $4,500 from off-farm sources. Their average household cash income was $39,988. They received an average of nearly $10,090 in direct government payments, but the 52 percent which participated in government programs received an average of $19,300. The higher payments reflect both the large size of their operations and the high proportion of their involvement in the production of federally supported commodities, says Ahearn.

The Average Income of Farm Operator Households Exceeded the Averages for All U.S. Households in 8 of 17 Years Between 1970 and 1986

	Average annual income		
	Farm oper. households[1]	U.S. households[2]	Ratio[3]
	dollars		*percent*
1970	9,472	10,001	95
1971	9,823	10,383	95
1972	12,328	11,286	109
1973	17,854	12,157	147
1974	18,204	13,094	139
1975	15,894	13,779	114
1976	16,463	14,922	110
1977	14,986	16,100	92
1978	17,955	17,730	101
1979	18,797	19,554	96
1980	18,434	21,063	88
1981	17,411	22,787	76
1982	20,422	24,309	84
1983	20,623	25,401	91
1984	22,347	27,464	81
1985	29,436	29,066	101
1986	34,246	30,759	111

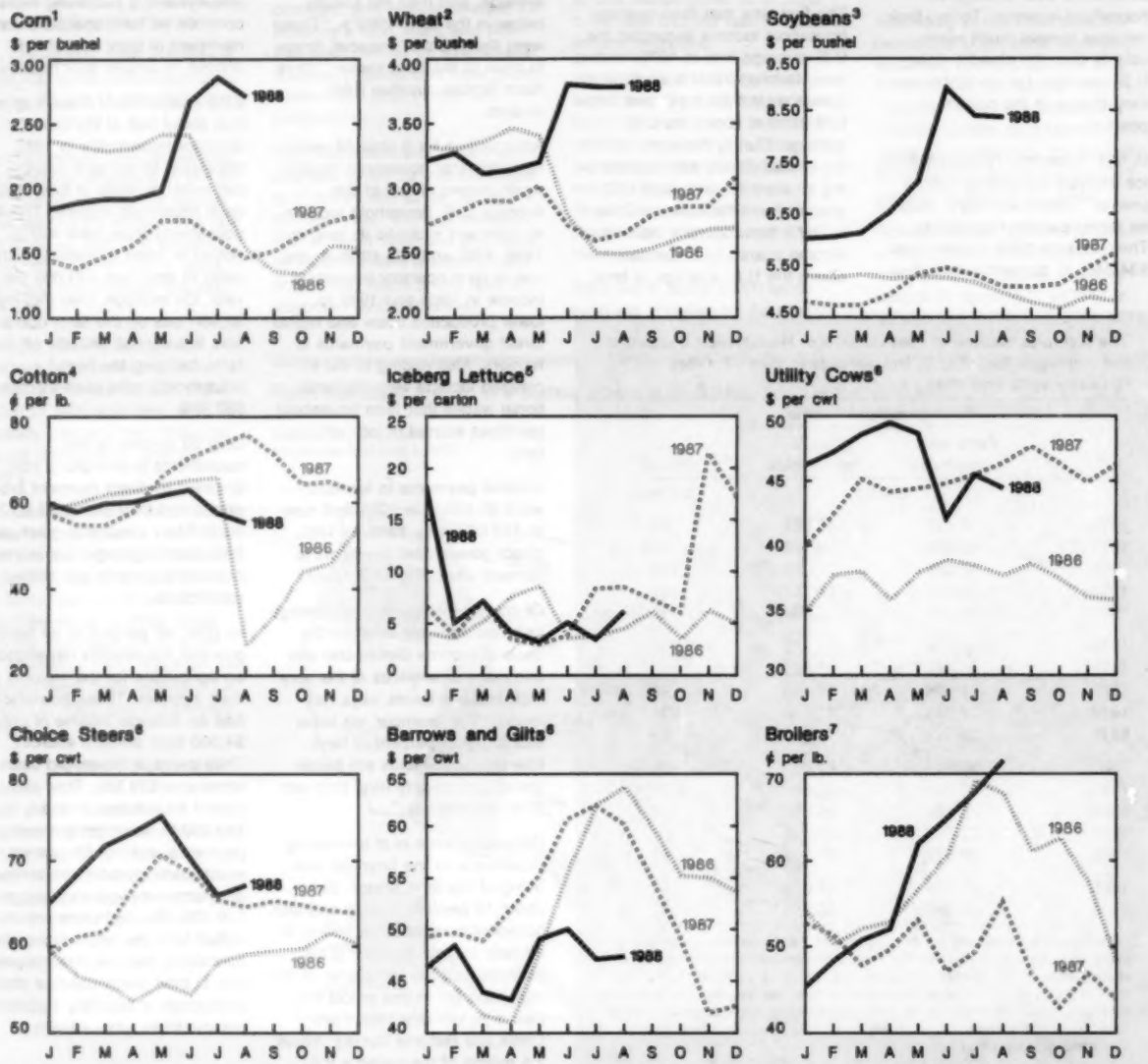
[1]Assumes one household per farm operation. Farm operator household income includes wages and salaries farm operators pay themselves, including allowances for depreciation of farm assets. It excludes nonmoney income, such as the value of inventory changes, the imputed rental value of farm dwellings, and the value of products produced and consumed on the farm. [2]Farm households included. [3]Ratio of farm household income to average U.S. household income.

Source: USDA *Economic Indicators of the Farm Sector: Farm Sector Review, 1986.*

FARMLINE TRENDS

Monthly Price Monitor

USDA's August 1988 index of farm prices increased 2.1% from July and was 13% above its year-earlier level. After climbing for 11 months, corn prices dropped 15¢ to $2.71 per bushel. Wheat held steady at $3.78, and soybeans were down 3¢ to $8.35. Cotton slipped to 55.2¢ a lb., its lowest price since March 1987. In the meat animals area, utility cows lost over $1, falling to $44.35 per cwt. Choice steers increased $1.19 per cwt to $67.08. Barrows and gilts were up slightly to $47.28, while broilers jumped off the chart, rising nearly 4¢ per lb. to 71.4¢. All prices shown are monthly averages.



[1]No. 2 yellow, Central Illinois. [2]No. 1 HRW, Kansas City. [3]No. 1 yellow, Central Illinois. [4]SLM 1-1/16", spot market price. [5]Standard carton 24's, California–Arizona. [6]Omaha. [7]Wholesale, New York.

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